optris® **CSvideo 2M**

Two-wire infrared thermometer for temperature measurement of metals from 250°C to 1600°C with video sighting and precise laser aiming

General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10^{-3} mbar)
Ambient temperature	-20°C to 70°C (50°C with laser ON)
Storage temperature	-40°C to 85°C
Relative humidity	10-95%, non-condensing
Vibration	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g

Electrical specifications

Output / analog	4-20 mA
Loop resistance	max. 1000 Ω[1]
Output / alarm	0-30 V / 500 mA (open-collector)
Output/ digital	USB 2.0
Video sighting[2]	digital (USB 2.0), 640 x 480 px, FOV 3.1° x 2.4°
Cable length (analog + alarm)	3 m, 8 m, 15 m
Cable length (USB)	5 m (incl.), 10 m, 20 m, 100 m (over Ethernet)
Current draw (laser)	45 mA at 5 V 20 mA at 12 V 12 mA at 24 V
Power supply	5-28 V DC

Measurement specifications

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Temperature range (scalable via software)	250°C to 800°C (2ML) 385°C to 1600°C (2MH)
Spectral range	1.6 µm
Optical resolution (90 % energy)	150:1 (2ML) 300:1 (2MH)
System accuracy (at T_{amb} = 23 ± 5°C)	± (0,3% of reading + 2°C)
Repeatability (at T_{amb} = 23 ± 5°C)	± (0,1% of reading + 1°C)
Temperature resolution	0.1 K
Response time (90% signal)	10 ms
Emissivity/ Gain (adjustable via	0.100 - 1.100
IR window correction (adjustable via software)	0.100 - 1.000
Signal processing (parameter adjustable via software)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software (incl.)	optris Compact Connect (Sensor setup, video sighting and process monitoring)

[1] *In dependence on supply voltage*
[2] *Video sighting is usable at focus distance (± 10% of measuring distance)*

Innovative Infrared Technology

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Optical parameter

Diagram SF Optics

2MH SF 300:1
3,7 mm@ 1100 mm

7,3 mm@ 1100 mm
2ML SF 150:1
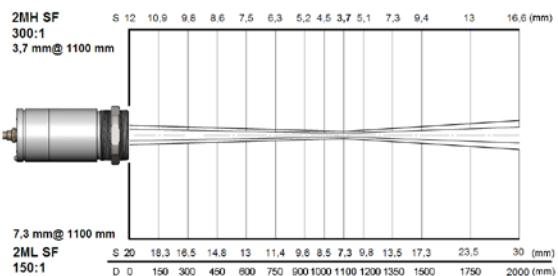
Focus	2ML (150:1)	2MH (300:1)
...CF2	1 mm @ 150 mm	0,5 mm @ 150 mm
...CF3	1,3 mm @ 200 mm	0,7 mm @ 200 mm
...CF4	3 mm @ 450 mm	1,5 mm @ 450 mm
...SF	7,3 mm @ 1100 mm	3,7 mm @ 1100 mm
...FF	24 mm @ 3600 mm	12 mm @ 3600 mm

Operation modes

Analoge operation mode: 4-20 mA and alarm interface. Setup & installation via USB cable (hot Plug & Play)

7-pin connector
4-pin connector

Loop +
Laser +
4-20 mA
5-28 V DC
Alarm
0-30 V DC/ 500 mA
Loop -
Laser -
Shield

USB

797,0°C
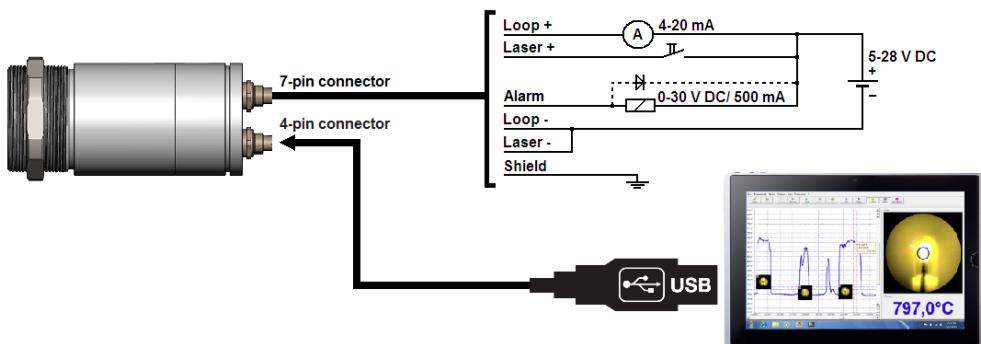
Digital operation mode: process control (Video and temperature) via software



4-pin connector

USB

797,0°C
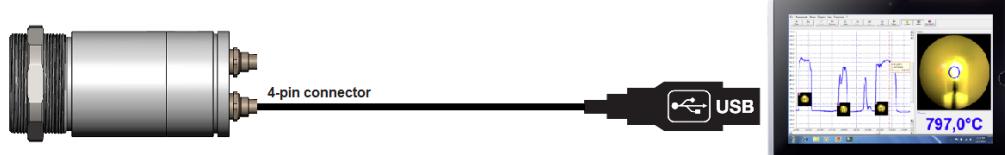
Software included

797,0°C

NEW
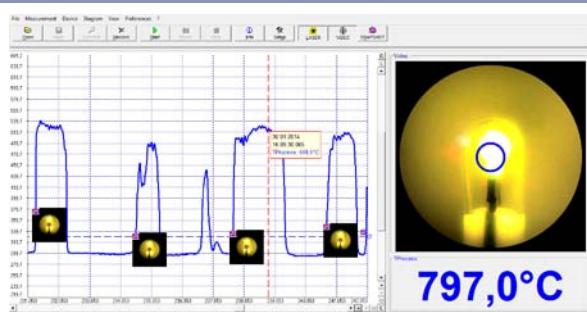
- Automatic snapshots (time- or temperature dependent) to control and document the process
- Graphic display and recording of the measurement values
- Setup of sensor parameters and signal processing functions
- Remote control of the sensor

Dimensions sensing head

105,5
Ø 49,8
M48 x 1,5
Ø 55
SW 52
13
8
30
18

optris infrared thermometers

CE